

Abstract of the Disclosure

5 An additive composition comprises a Mannich reaction product of a) a polyisobutylene (PIB) alkylated hydroxyaromatic compound, b) an aldehyde, and c) an amine containing at least one reactive amino group where the PIB is derived from a conventional PIB and a high vinylidene PIB. A fuel additive concentrate composition, a fuel composition, and a method to reduce deposit formation in a fuel system of an
10 internal combustion engine employ the additive composition that comprises the Mannich reaction product which is unexpectedly effective in reducing deposits. A PIB alkylated hydroxyaromatic compound, that is prepared from a mixture of high vinylidene and conventional PIBs, is both a functional additive and an intermediate to a functional additive and the process to prepare it involves running the alkylation reaction at 5 to
15 40°C.

20

25

30